Region VIII Superfund Site Prioritization
Technical Environmental Criteria Calculation Work Sheet

Site Name: Upper Animas Mining District

State: Co Current Status: EST ongoing

Date: 5/27/97

Site Contact Name: Jim Hanley

Technical Factors

A. Toxicity of Contaminants (nature of principal threat)*

a) human	3	x	5 =	15	
b) ecological	4	x	5 =	20	20

B. Site Characteristics: Waste stability, Volume, Concentration, and Mobility

4	x	5 =		20

C. Human Exposure

4	x	5 if residential =	
	x	3 if worker =	
	x	2 if recreational =	8

D. Ecological Exposure

5	x	5 =	25

TOTAL 73

Ratings are 1 to 5.
* If human exposure value is larger than ecological, this number is the human toxicity number. If ecological exposure is greater, this number equals the ecological toxicity value.

NARRATIVE SUMMARY: No smelter waste
Contaminent evidence tens of miles downstream from sources.
Exposure - Durango water supply will use Animas as a source for drinking water this year. (A reservoir drained to complete dam work will be refilled). Exposure did not consider this because it is not the norm.
Ecological exposure - gold water fishery impacted (managed spart fishery) Animas River.
lots of data but only summaries were provided TEP. Groundwater drinking water data coming in several months.

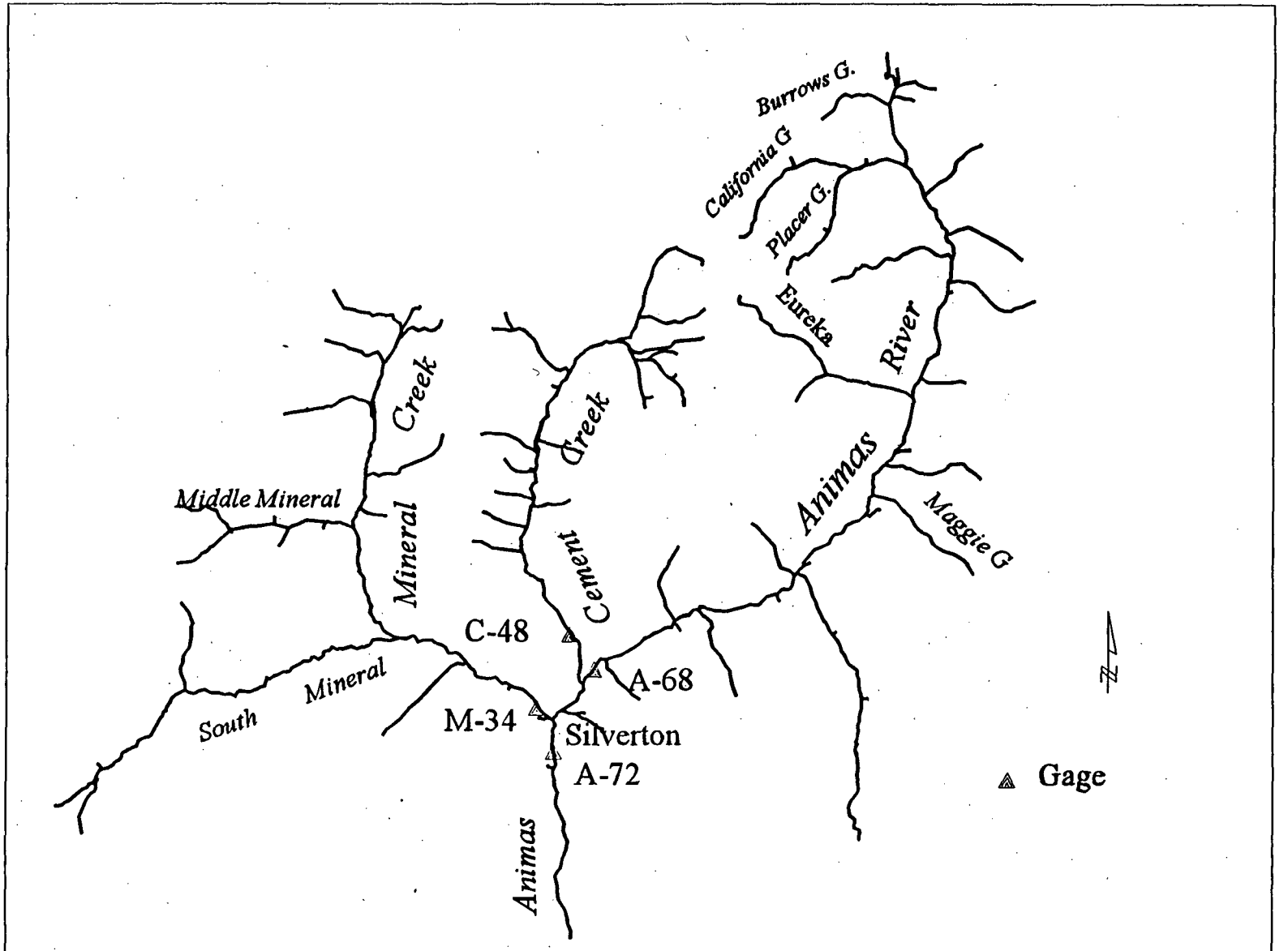

Figure 1 Locations of Major Tributaries in the Upper Animas Basin

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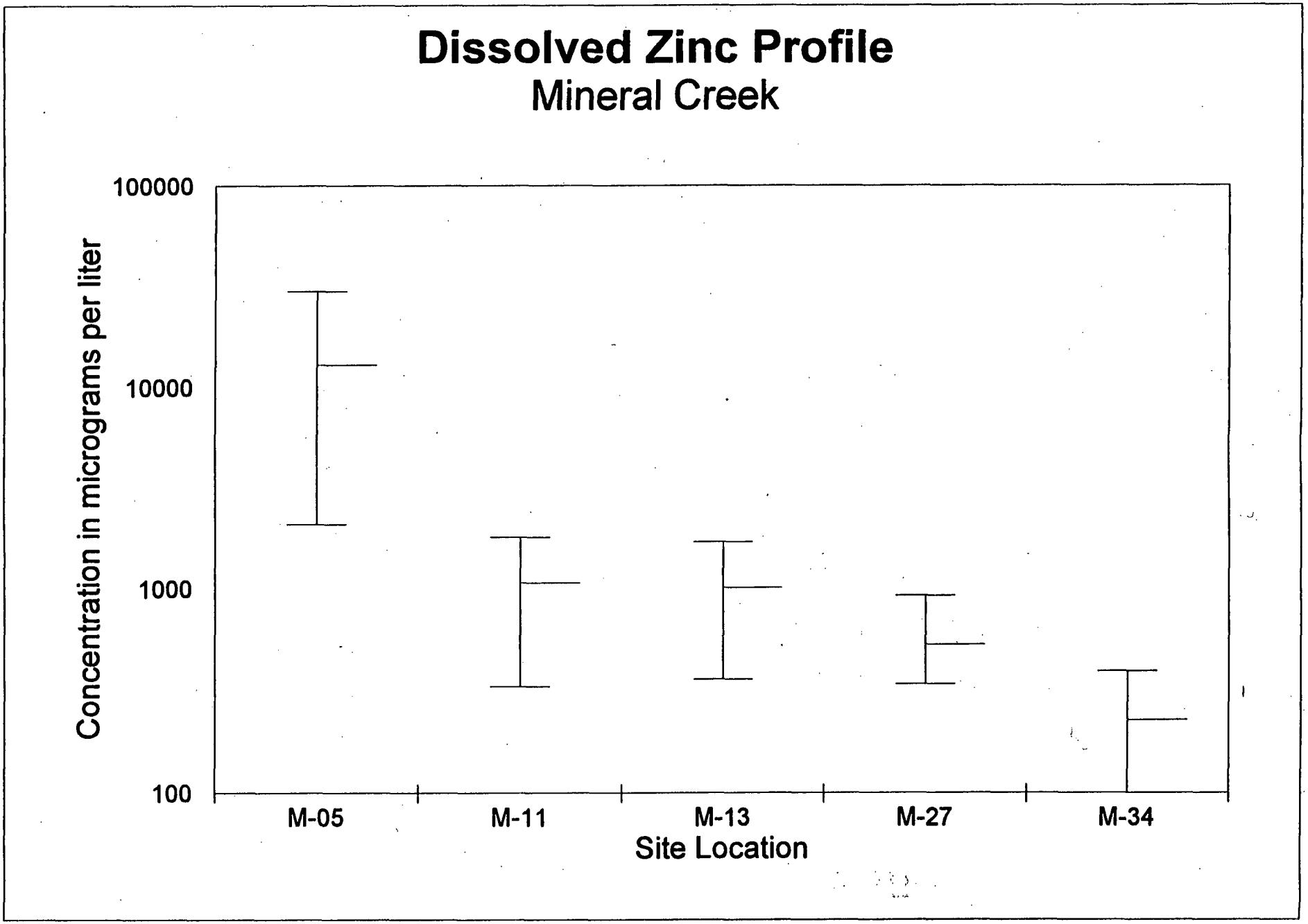


Figure 14

Region VIII Superfund Technical Evaluation Panel (TEP)
Site Fact Sheet Summary

Site Name: Upper Animas Mining District

State: Colorado Current Status: ESI ongoing

Date: May 27, 1997

Individual Completing Form: J. Hanley

PLEASE ATTACH A MAP OF THE SITE LOCATION

A. Toxicity/Concentration of Contaminants

Principal Contaminants	Physical/Chemical Nature of Waste (IE., slag, tailings, etc.)	Contaminated Media (soil, air, water)	Media Concentration (note whether average, RME, or maximum)	Relative Toxicity (SCDMS) and Ecotoxicity
Al Cd Cu Fe Mn Pb Zn	tailings, waste rock, draining mine openings	source areas	N/A	
Acidity Al Cd Cu Fe Mn Pb Zn		surface water	see attached	
Al Cd Cu Fe Mn Pb Zn		groundwater	see attached	
Cd Mn Pb		public water supply sources	see attached	

B. SITE CHARACTERISTICS

1. **Any Conditions that are currently causing or may cause the project site to be unstable:**

   316 acres of land disturbed by historic mining(last operation closed in 1991). 78 of 307 mine openings currently releasing acid mine drainage (AMD) containing hazardous substances in toxic concentrations.

2. **Volume or area contaminated:** 146 sq. mile watershed(Animas, Cement, Mineral Creeks). No fish or macroinvertebrates have been found from Site impacts in Cement and Mineral Creeks. Site impacts tens of miles of downstream Animas River.

3. **Mobility of contaminants by media both known and potential:** Cd and Zn transported in dissolved or colloidal state via groundwater and surface water. All contaminants transported in suspended sediment load of Animas River.

4. **Concentration of waste source:** Not relevant; this is an historic mining district with both

naturally-elevated and mining-related sources of typical mining waste and mill tailings.

5. **Have there been historical releases?** Yes, documented since 1977 by CDOW.

C. HUMAN POPULATION EXPOSED

1. **Distance of contamination to nearest population:** The town of Silverton is located at the confluence of Cement and Mineral Creeks with the Animas River.

2. **Describe any physical or institutional controls which prevent contaminant from contact with receptor:** Water treatment system operated by last mining operator, Sunnyside Gold Corp.

3. **How many people are actually exposed under current conditions? (specify workers or residential)** Silverton has a winter residential population of 500.

4. **How many people are potentially exposed under current conditions?(specify workers or residential)** Summer narrow gauge railroad tourist visits swells potential seasonal exposure many times.

5. **How many people are currently exposed at a concentration above a safe level?** Unknown however BLM is taking a time-critical removal action on one of the closest minewaste sources to the town, Lakawanna tailings site, and have cited surface soil Pb concentrations of concern to town children known to play in this area.

6. **Are drinking water supplies impacted, expected to be impacted, or potentially impacted?** Elevated levels of Cd, Mn, and Pb have been detected and downstream communities dependent upon Animas River are expected to be impacted.

7. **Is soil contamination in residential areas or near schools?** TBD

8. **By what pathway does exposure occur or potentially occur?** Ingestion of dust from contaminated soils or potentially from ingestion of contaminated drinking water or any fish caught downstream

D. ENVIRONMENTAL IMPACTS

1. **Describe the sensitive environment or other significant environment threatened, and any designation given this environment by the Federal government or others. Indicated if it is a nesting/breeding area or migratory area, or the site is the near either of these.** Sensitive environments like wetlands exist but have not been evaluated for effects.

2. **Name of federally designated Endangered Species.** TBD

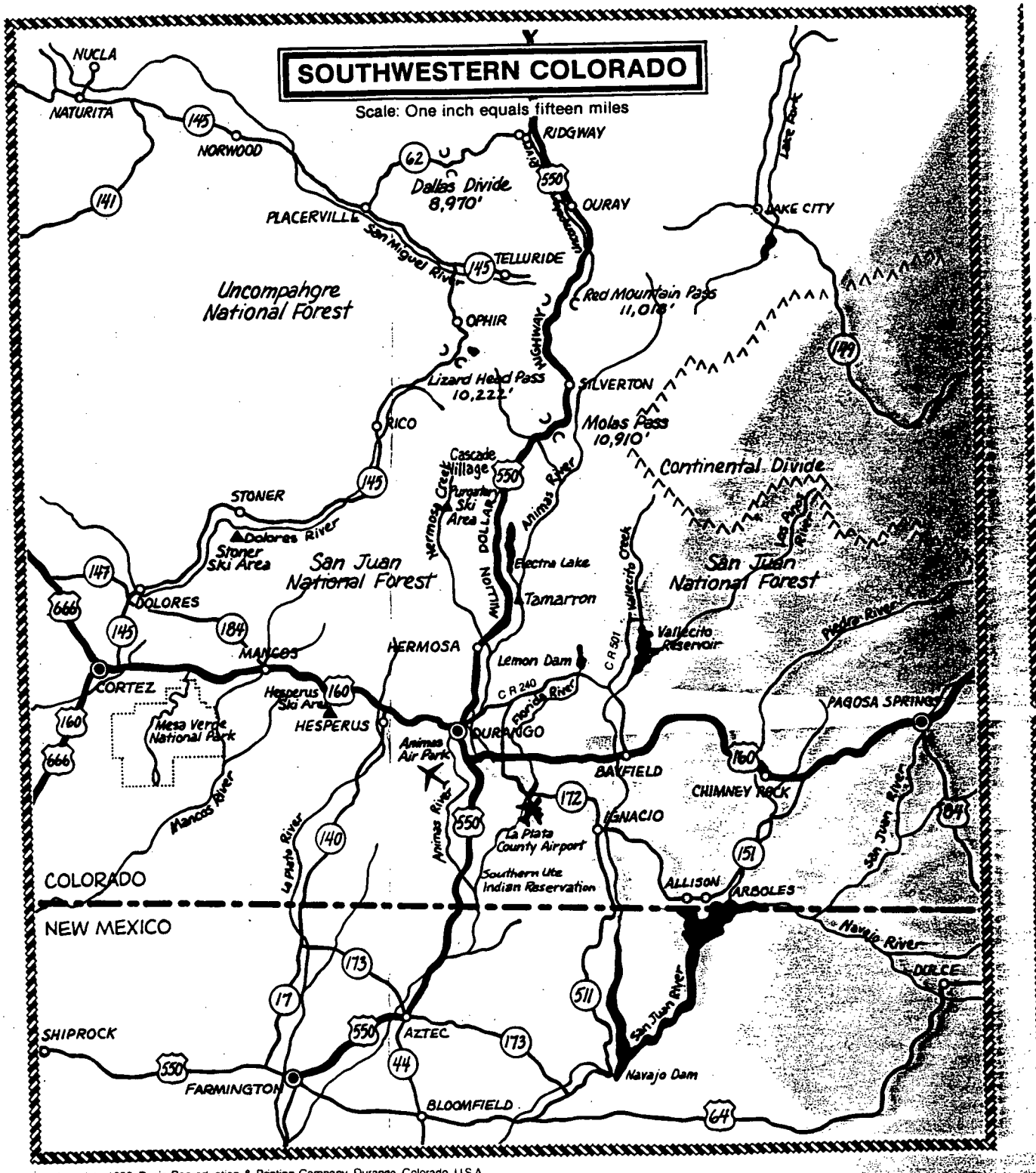
3. **Who determined that an endangered species, sensitive environment, or other significant environment is or will be at risk because of this contamination? What were their recommendations?** CDOW and USGS/Biological Research Division is completing a Limitiing Factors Analysis (TBD); FWS has not yet evaluated this biologic assessment.

4. **Are wetlands impacted?** TBD

5. **Are there impacts on known fishing waters? If yes, are these rated desirable fishing waters?** Yes; aquatic life is impaired to at least Baker's Bridge, 27 miles downstream of Silverton. Water quality use classifications and standards were reviewed in September 1994. Aquatic goal-based standards were adopted for implementation in March 1998; an in-stream dissolved Zn goal of 225 micrograms per liter is being proposed.

6. **Are there impacts on recreation? Is it a designated recreational area? (Recreational areas may include non-designated areas such as places where motorcycles or dirt bikes are used.)** Yes; the Animas River corridor serves many recreational interests, including rafting and fishing.

7. **Are ambient water quality Gold Book Standards (or other standards) exceeded?** Of course!



DURANGO!

AREA

Chamber Resort

ASSOCIATION

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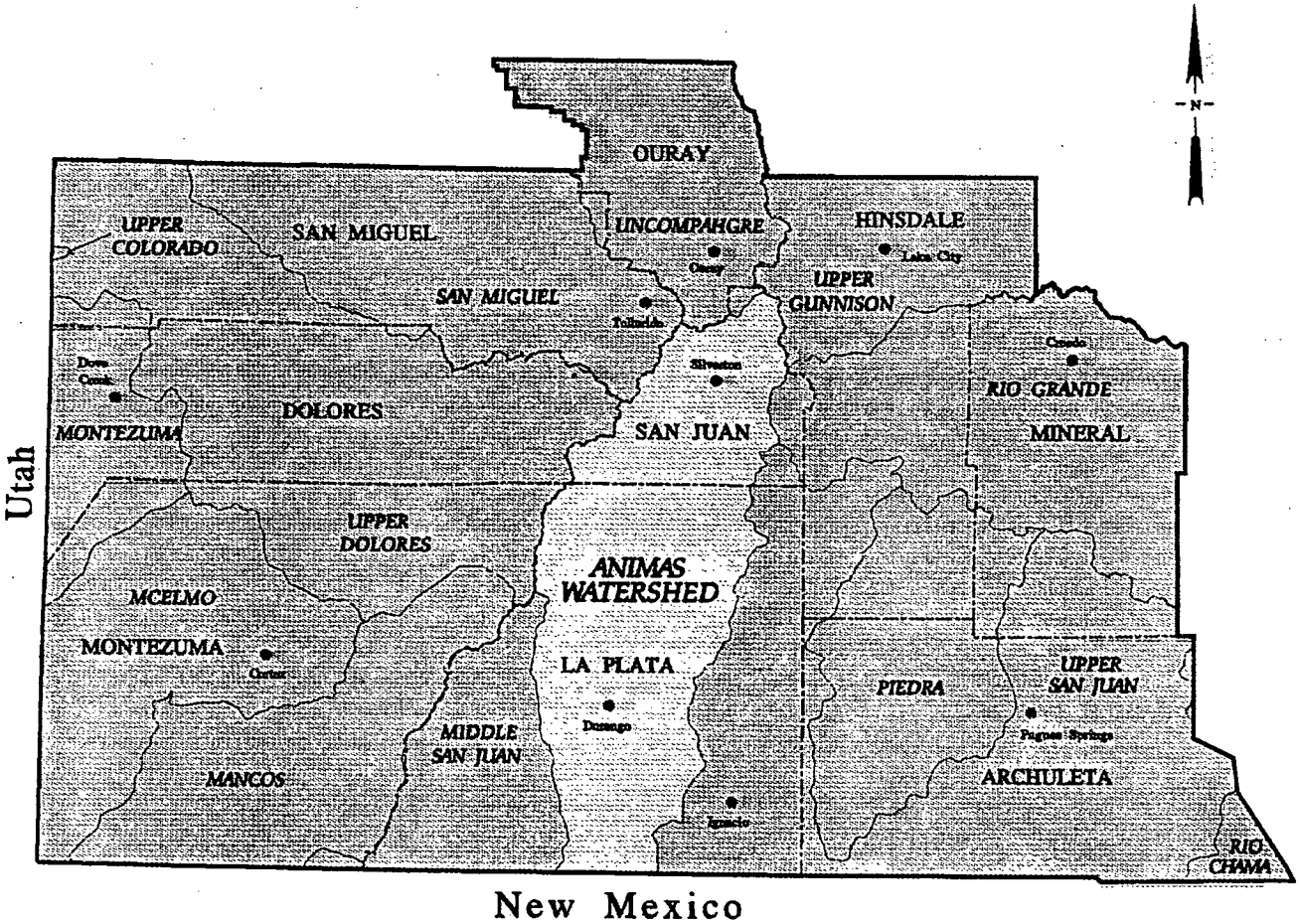
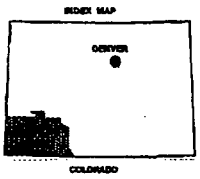
ANIMAS RIVER WATERSHED STUDY
SOUTHWESTERN COLORADO

COUNTY AND WATERSHED INDEX



Explanation

- County Lines
- Watershed Boundaries
- Towns



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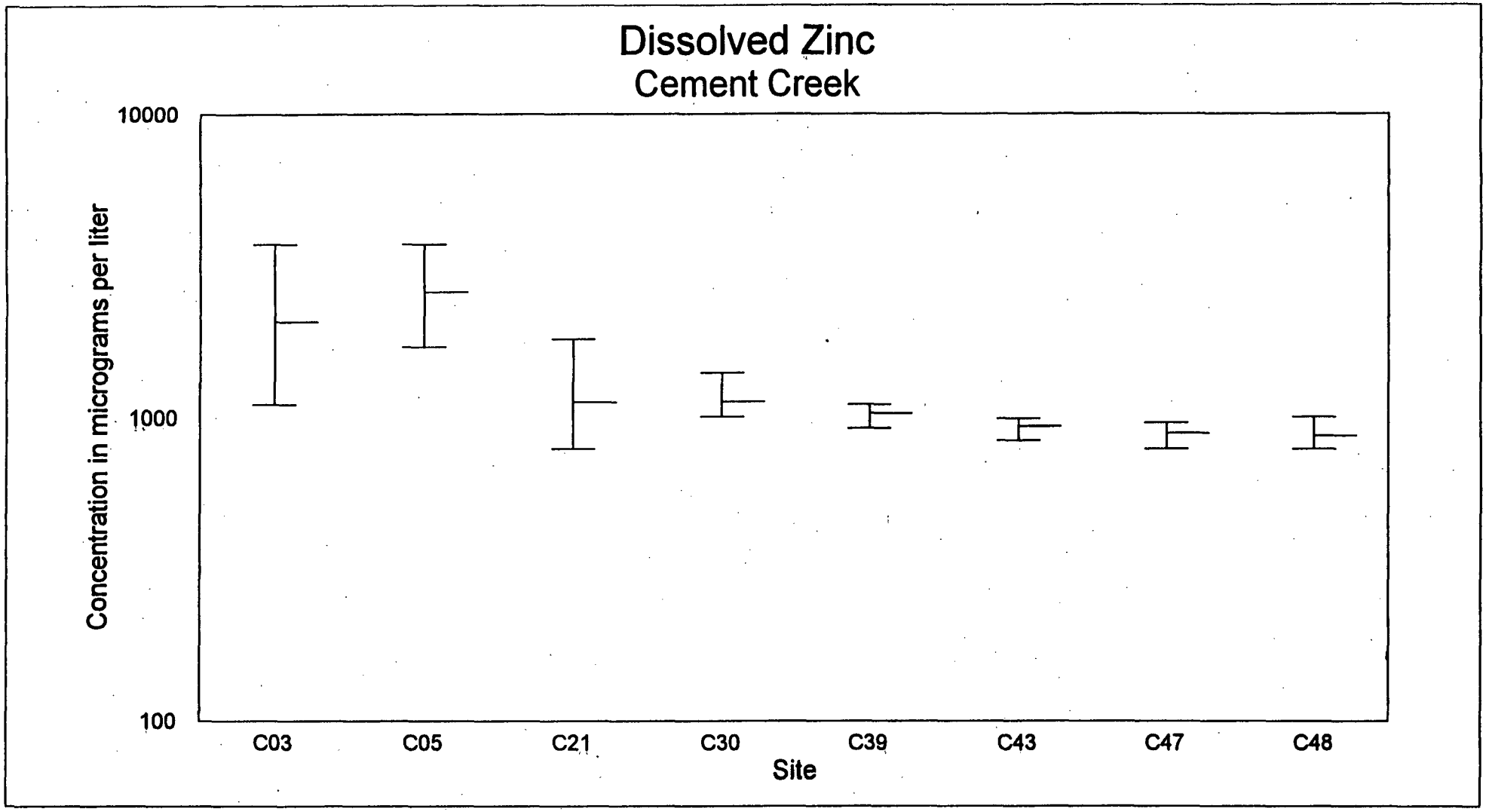

Figure 12